

In the Claims:

Please amend the claims as follows:

1-16. (canceled)

17. (currently amended) A displacement control method, comprising:

a calculating step of calculating a displacement control signal for driving a proportional electromagnetic valve based on a displacement command;

an adjusting step of adjusting a displacement angle of a hydraulic device by driving the proportional electromagnetic valve with the displacement control signal calculated in the calculating step, and applying a displacement control pressure generated from the proportional electromagnetic valve to a displacement adjusting device; and

a judging step of judging whether a learning control mode is selected or a normal control mode is selected, wherein

the displacement control signal is calculated in the calculating step based on ~~[[the]]~~ a required displacement control pressure, the required displacement control pressure being based on a reference characteristic representing a relationship between a required displacement control pressure required to provide a displacement angle corresponding to ~~[[the]]~~ a displacement command and a required displacement control signal required for the proportional electromagnetic valve to generate the required displacement control pressure,

the calculating step further comprises when the learning control mode is selected:

calculating based on the reference characteristic a minimum-side displacement control pressure corresponding to a minimum-side displacement control signal required to achieve a minimum-side displacement that is set in advance for learning and calculating a maximum-side displacement control pressure corresponding to a maximum-side displacement control signal required [[.]] to achieve a maximum-side displacement that is set in advance for learning,

detecting a pressure generated from the proportional electromagnetic valve when the proportional electromagnetic valve is driven with the minimum-side displacement control signal as a first measured pressure,

detecting a pressure generated from the proportional electromagnetic valve when the proportional electromagnetic valve is driven with the maximum-side displacement control signal as a second measured pressure,

calculating as learned values a first difference between the minimum-side displacement control pressure and the first measured pressure, and a second difference between the maximum-side displacement control pressure and the second measured pressure, and

generating a correction characteristic representing a relationship between a correction pressure and a displacement command, based on the first difference and the second difference and the minimum-side displacement corresponding to the first measured pressure and the maximum-side displacement corresponding to the second measured pressure,

the calculating step further comprises when the normal control mode is selected:

in response to an operator-generated displacement command, calculating a correction pressure based on the correction characteristic and the operator-generated displacement command,

correcting a required displacement control pressure required to provide a displacement angle corresponding to the operator-generated displacement command with the correction pressure; and

calculating the displacement control signal based on the corrected required displacement control pressure with reference to the reference characteristic.

18. (canceled)

19. (previously presented) A displacement control method according to claim 17, wherein;

when detecting the first measured pressure, the displacement control signal is increased from a minimum displacement so as to set the minimum-displacement-side control signal for learning, for use in detection of the first measured pressure; and

when detecting the second measured pressure, the displacement control signal is reduced from a maximum displacement so as to set the maximum-

displacement-side control signal for learning, for use in detection of the second measured pressure.

20. (canceled)

21. (currently amended) A displacement control device, comprising:

a calculating unit, the calculating unit calculating a displacement control signal for driving a proportional electromagnetic valve based on a displacement command; and

an adjusting unit, the adjusting unit adjusting a displacement angle of a hydraulic device by driving the proportional electromagnetic valve with the displacement control signal calculated by the calculating unit, and applying a displacement control pressure generated from the proportional electromagnetic valve to a displacement adjusting device, wherein with reference to a reference characteristic representing a relationship between a required displacement control pressure required to provide a displacement angle corresponding to a displacement command and a required displacement control signal required for the proportional electromagnetic valve to generate the required displacement control pressure, the calculating unit calculates the displacement control signal based on the required displacement control pressure,

wherein

the calculating unit judges whether a learning control mode is selected or a normal control mode is selected,

the calculating unit, based on the reference characteristic, calculates a minimum-side displacement control pressure corresponding to a minimum-side displacement control signal required to achieve a minimum-side displacement that is set in advance for learning, and a maximum-side displacement control pressure corresponding to a maximum-side displacement control signal required to achieve a maximum-side displacement that is set in advance for learning, when the learning control mode is selected,

the displacement control device further comprises a pressure detector which detects a pressure generated from the proportional electromagnetic valve when the proportional electromagnetic valve is driven with the minimum-side displacement control signal as a first measured pressure, and detecting a pressure generated [[.]] from the proportional electromagnetic valve when the proportional electromagnetic valve is driven with the maximum-side displacement control signal as a second measured pressure, when the learning control mode is selected,

the calculating unit calculates as learned values a first difference between the minimum-side displacement control pressure and the first measured pressure, and a second difference between the maximum-side displacement control pressure and the second measured pressure, when the learning control mode is selected,

the calculating unit generates a correction characteristic representing a relationship between a correction pressure and a displacement command, based on the first difference and the second difference and the

minimum-side displacement corresponding to the first measured pressure and the maximum-side displacement corresponding to the second measured pressure, when the learning control mode is selected,

the calculating unit calculates a correction pressure based on the correction characteristic and a displacement command when the displacement command is generated, and corrects a required displacement control pressure required to provide a displacement angle corresponding to the generated displacement command with the correction pressure, when the normal control mode is selected, and

the calculating unit calculates the displacement control signal based on the corrected required displacement control pressure with reference to the reference characteristic, when the normal control mode is selected.

22. (canceled)

23. (previously presented) A construction machine, comprising a displacement control device according to claim 21.

24-26. (canceled)